Miller, Robert

From: McMillin, Stella@Wildlife <Stella.McMillin@wildlife.ca.gov>
Sent: Tuesday, August 22, 2017 3:08 PM
To: County Ag Commissioner, Ventura; Palmer-Townsend, Marilyn@CDPR; Kratville, David@CDFA; Miller, Robert
Subject: Loss report for gray fox in Ventura County
Attachments: P3189.pdf

Hello all, I have attached a loss report for a gray fox in Ventura County. If you have any questions or comments, please contact me.

Thank you.

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DEPARTMENT OF FISH AND WILDLIFE
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Lab Number P-3189
Necropsy Number Z16-1258
CAHFS Number D1614758

Date of loss: November 5, 2016
Sample: Gray fox
Urocyon cinereoargenteus
Listing status: None

To: Henry Gonzales
Ventura County Agricultural Commissioner

Report Date: July 18, 2017

Remarks
Exposure to five anticoagulant rodenticides in a gray fox.

Background
On November 5, 2016, a gray fox was found dead on a trail in Ojai. This individual was the third gray fox found dead in a small geographic area in a three month period. The fox was sent to the CDFW Wildlife Investigations Laboratory (WIL) to determine the cause of death. -001

RESULTS OF EXAMINATION

A necropsy was performed at the WIL on November 17, 2016. This gray fox was an adult female in poor nutritional condition. The coat was in good condition. The oral cavity contained a small amount of blood-tinged saliva and the tongue was bruised along the lateral edges. The teeth showed signs of moderate to advanced wear. The stomach and intestines contained scant brown fluid and insect exoskeletons. The bladder contained approximately 8 cc of red-tinged urine. There was a small amount of hemorrhage around the liver. No signs of trauma were found.

Tissues were submitted to the California Animal Health and Food Safety in Davis for further analysis. Interstitial pneumonia was identified microscopically. Immunohistochemistry was positive for canine distemper virus, which is often a fatal disease in gray foxes. In addition, five anticoagulant rodenticides were detected in the liver: 0.580 ppm brodifacoum, 0.310 ppm bromadiolone, 0.200 ppm difethialone, 0.320 ppm diphacinone, and a trace of warfarin.

Brodifacoum, bromadiolone, and difethialone (second generation anticoagulant rodenticides) are California restricted materials used for commensal rodent control. Diphacinone and warfarin are first generation anticoagulant rodenticides and are used to control both commensal and field rodents. Signs of intoxication have been found when liver concentrations of second generation anticoagulant rodenticides are above 0.1-0.2 ppm (Thomas et al 2011). While the concentrations of anticoagulant rodenticides found in this fox were high enough to have caused intoxication, the cause of death in this case was canine distemper virus.

Reference:
Thomas, P.J., P. Mineau, R.F. Shore, L. Champoux, P.A. Martin, L.K. Wilson, G. Fitzgerald, and J.E. Elliot. 2011. Second generation anticoagulant rodenticides in predatory birds: Probabilistic characterization of toxic liver concentrations and implications for predatory bird populations in Canada. Environment International 37: 914-920.

WILDLIFE INVESTIGATIONS LABORATORY

Stella McMillin

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Approved

Dr. Clifford

Dr. Deana Clifford, Senior Wildlife Veterinarian,
Wildlife Investigations Laboratory

Cc: **Marilyn Palmer-Townsend,**
CDPR

David Kratville,
CDFA

Robert Miller,
USEPA